INTERACTIONS BETWEEN RETROVIRUSES AND HERPESVIRUSES

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Editors

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Preface

Retroviruses and herpesviruses are two common human pathogens. Together, they occupy one of the most important places in modern Medical Virology. Coinfections of these two viruses in the same individuals are frequently observed, especially in patients afflicted with AIDS. Potential consequences of such interactions include the exacerbation of the disease, changing of the disease courses, release of new viruses with expanded tropism or increased virulence, etc. An understanding of the underlying mechanism is important, but, thus far, few insights have been gained. The present monograph is intended to provide an updated and concise review of recent work on the molecular and cellular mechanisms of such interactions.

This book is divided into eight chapters. The first three are focused on the avian model system, where a number of prototypic retrovirus/herpesvirus interactions have been uncovered. Three of them are presented here: the enhancement of retrovirus-induced neoplasia by herpesviruses (Fadly and Ewert); retroviral integration into herpesvirus genomes (Jones, Brunovskis and Kung); and transcriptional activation of retroviral LTR by herpesvirus (Coussens). The remaining five chapters are devoted to interactions between HIV (human immunodeficiency virus) and three human herpesviruses considered to be possible risk factors in the development of AIDS. Vlach and Pitha describe the transcriptional regulation of HIV by HSV (herpes simplex virus). This is followed by two chapters on the interactions between HIV and CMV (cytomegalovirus). Manion and Hirsch provide an insightful summary of the clinical aspects of such an interaction and the possible direct and indirect mechanisms involved. Spector *et al.* detail the complex effects of CMV infection on HIV replication. The last two chapters deal with the interactions between HIV and HHV-6 (human herpesvirus-6). An excellent overview of HHV-6 and its interactions with HIV is given in the article by Lusso. The specific HHV-6 genes involved in regulation of HIV expression are described by Wood and Chandran in the last chapter.

While this monograph is not meant to be inclusive, hopefully it will provide a good sampling of the best understood retrovirus/herpesvirus interactions and a balanced review of the underlying mechanisms. The contributing authors are among the leaders in this field and are responsible for many of the original discoveries presented. This book should serve as a valuable research and teaching reference for both beginning and advanced researchers in Virology and Oncology.

Hsing-Jien Kung and Charles Wood

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